Claims

1. A temperature-controlled shield ring, comprising:

a shield ring for surrounding a substrate holder; and

coolant passageways within a portion of the shield ring for controlling a temperature of the shield ring by passing a coolant through the coolant passageways.

2. The temperature-controlled shield ring according to claim 1, wherein the shield ring comprises:

a cap; and

a heat conducting element connected between the cap and a location where a substrate would rest during processing, the heat conducting element configured to transfer heat from the substrate to the cap.

3. The temperature-controlled shield ring according to claim 2, wherein the cap comprises a ceramic material.

4. The temperature-controlled shield ring according to claim 2, wherein the cap comprises anodized aluminum.

5. The temperature-controlled shield ring according to claim 1, wherein the coolant comprises a dielectric fluid.

6. The temperature-controlled shield ring according to claim 1, further comprising an insulator housed between the shield ring and the substrate holder.

7. The temperature-controlled shield ring according to claim 1, further comprising an adapter for connecting to a cooling system of the substrate to provide coolant exchange between the shield ring and the substrate holder.

8. The temperature-controlled shield ring according to claim 1, wherein the shield ring is configured to attach to the substrate holder without the use of fasteners.